

**ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

PROJECT INFORMATION

Project Title: Teacup/Tecolote Water Development Project – Phase 2

Project No. 09-523

Region/GMU: 5/37B

HPC: Tucson

Project Type: Water development

Project Description:

This cooperative project is a landscape scale, three-phased project which will provide water for wildlife and livestock. WAFWA's (Western Association of Fish and Wildlife Agencies) Habitat Guidelines for Mule Deer suggest that water sources not be more than 3 miles apart so all mule deer habitat is within 1.5 miles of a permanent water source (Brownlee 1979, Dickinson and Garner 1979). Consistent with these recommendations, this project will provide a permanent water source within 1.5 miles of **24 different sections**. Cooperators include the NRCS, BLM, Rick Bader (livestock operator), ASLD, AGFD and possibly APS. The three phases are broken down into years starting in 2010. Phase one has been funded and will be completed by January of 2010. The phases are as follows: 2010) drill two different wells to a depth not to exceed 690 feet and install windmills on each; 2011) install approximately four miles of 160 psi pipe, three 10,000 gallon storage tanks, and 3 troughs; 2012) install 1.5 miles of 160 psi pipe, two 10,000 gallon storage tanks, and two troughs. I am proposing funding years 2011 and 2012 this year shown as phase two in the itemized cost share sheet. This project has considerable cost-share. The **NRCS** will provide **\$169,744** in funding through an EQUIP grant and the **rancher, Rick Bader**, is willing to install everything, providing all required labor and heavy equipment for the project, except for the drilling of the wells. This is conservatively estimated at **\$23,396**. The match ratio for the AGFD is **8.5:1**.

Wildlife Species to Benefit: mule deer, Coues' deer, javelina, small game and nongame

Possible Funding Partners:

Implementation Schedule:

Beginning: September 1, 2008

Completed: June 30, 2012

NEPA Compliance: (if applicable)

Completed: Yes ____ No X

Projected Completion Date: February 2009

PROJECT FUNDING

SBG Funds Requested: \$13,000 total (Phase 2 for years 2011 and 2012)

Cost Share Funds: \$193,140

Total Project Costs: \$218,840

PARTICIPANT INFORMATION

Applicant: Ben Brochu

Telephone: (520) 229-3222

Address:

Arizona Game and Fish Department

555 N. Greasewood Road

Tucson, AZ 85745

AGFD Contact and Phone No.

(If applicant is not AGFD personnel)

Coordinated with: Darrell Tersey (BLM), Rick Bader (livestock operator), Kristen Egen and Alicia Phipps (NRCS), Rachel McGee

Date: 8-8-08

(ASLD) and Scott Paulsen (APS)	
Applicant's signature:	Date: September 1, 2009

SEND COMPLETED APPLICATIONS TO:

**Game Branch
2221 W. Greenway Rd.
Phoenix, AZ 85023
rothompson@azgfd.gov**

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES X NO

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? IF SO WAS IT FUNDED?

Yes, this project was submitted last year and phase 1 was funded.

NEED STATEMENT/PROBLEM ANALYSIS:

Game management unit 37B was once regarded as a premier mule deer unit. Beginning around 1995, mule deer numbers in the unit began to decline. They have not recovered since.

Mule deer numbers and distribution have been declining throughout the West since the latter third of the 20th century. To address this concern, the Western Association of Fish and Wildlife Agencies (WAFWA), an organization represented by 17 states and four Canadian provinces, created a Mule Deer Working Group (Group). Using adaptive resource management, the Group sent out to find “solutions to our common mule deer management problems” in the seven different ecoregions in North America. Overall, loss and degradation of habitat was determined to be the single greatest factor that has caused declines in mule deer. In the Southwest Desert Ecoregion, rainfall and competition with livestock were found to be the two biggest limiting factors. The number one recommendation of the Group to improve mule deer management in the Southwest Desert Ecoregion was to **create sources of water in areas where water is limiting** and where other potentially limiting factors are being addressed. Also, consistent with the Group’s recommendation is the Department’s Species Management Guidelines (SMG) which provides goals, objectives, strategies and procedures for a specific species. The SMG outlines four ways to improve and enhance deer habitat to accomplish the overall goal of increasing mule deer populations to levels that provide diverse recreational opportunities. Number one on the list is: Protect and maintain current water sources. Where water is lacking and the distribution and abundance of deer can be influenced, develop **new** water sources.

Water is a critical component of mule deer habitat. Deer habitat, no matter how attractive, will not be utilized if it is not near a source of water. Water sites should be no more than 2-3 miles apart and even closer in rough terrain (Wildlife Management Handbook, Managing Desert Mule Deer). WAFWAs Habitat Guidelines for Mule Deer support this suggesting that water sources not be more than 3 miles apart so all mule deer habitat is within 1.5 miles of a permanent water source (Brownlee 1979, Dickinson and Garner 1979). Water is extremely scarce in the range and is only present in earthen stock tanks after a heavy monsoon period and during the winter and early spring months and seldom lasts into May. Marshal et al. (2006) stated that water in the absence of forage and cover likely will not create mule deer habitat, but forage and cover in the absence of water may provide deer habitat, at least seasonally. Thus, catchments might make forage resources, which would otherwise be unavailable, available year-round. Further, where deer

might otherwise make seasonal movements between parts of their range with forage and parts with water, developments may reduce the need for seasonal movements, make a greater proportion of the range and its forage available to deer, reduce competition for forage in exploited range, decrease risks associated with long-distance movements (e.g., Nicholson et al. 1997, Bleich and Pierce 2001) and, thereby, increase deer abundance (Krausman and Czech 1998).

Perennial water sources are scarce within 37B. Many ranchers maintain and continue to install water sources; however, they use these waters as tools to move cattle, turning them off during some times of the year. Also, many grazing allotments within 37B do not have adequate water sources. Many of these allotments are severely overgrazed around water sources and underutilized in areas without water. This project will address these issues by providing perennial water sources in four different allotments. Forage utilization will be more evenly distributed within these allotments resulting in improved habitat conditions, namely browse species. Perennial water will be within 1.5 miles of 24 different sections of State and BLM land.

PROJECT OBJECTIVES:

- To increase deer and javelina populations by providing dependable, long term, self-sustaining, quality water sources on a landscape scale and by increasing the use of otherwise unavailable forage resources
- To improve forage conditions in four different allotments by spacing waters no more than 1.5 miles apart. Livestock will be less likely to over browse areas close to water and more likely to utilize the allotments equally.
- To increase hunter opportunity
- To improve relations with the ranching community

PROJECT STRATEGIES:

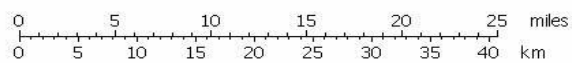
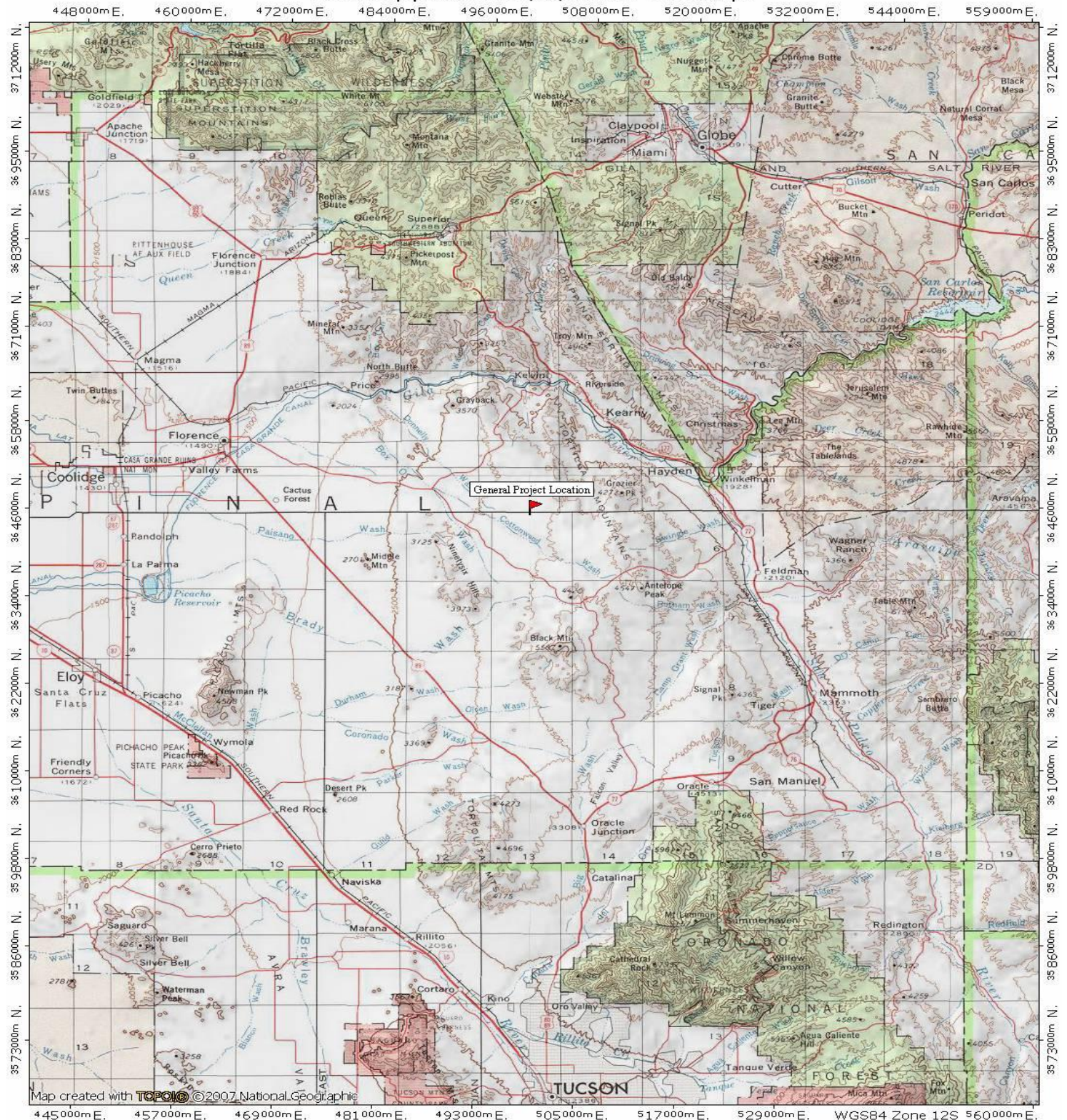
The three phase/year project will be completed in the following way:

- **Phases –**
 - **2010** – drill two different wells to a depth not to exceed 690 feet and install windmills on each
 - **2011** - install approximately four miles of 160 psi pipe, three 10,000 gallon storage tanks, and 3 troughs
 - **2012** - install 1.5 miles of 160 psi pipe, two 10,000 gallon storage tanks, and two troughs
- **Components** - Utilize big game special tag funds and NRCS funds to purchase the project components.
- **Installation of the wells** - The wells will be drilled using a contractor to a depth not to exceed 690 feet and cased with 6" Schedule 80 0.432 inch wall thickness PVC pipe consistent with NRCS specifications. Each well will receive a windmill to pump water. APS may partner and donate solar pumps for each well; however, their involvement is yet to be confirmed.
- **Installation of the pipeline, storage tanks and troughs** – Rancher Rick Bader has offered to install all of the project components and supply all heavy equipment needed to do this. The pipelines will be installed in the middle of existing two-track roadways to minimize disturbance to vegetation and avoid creating additional OHV travel routes. This will be completed using a dozer.
- **Development Branch Involvement** – Very little, if any, involvement from Development Branch is expected.
- **Volunteers** – Local sportsmen may be solicited to help with some phases of the project such as installing the wildlife drinkers and pipe rail fencing.

PROJECT LOCATION:

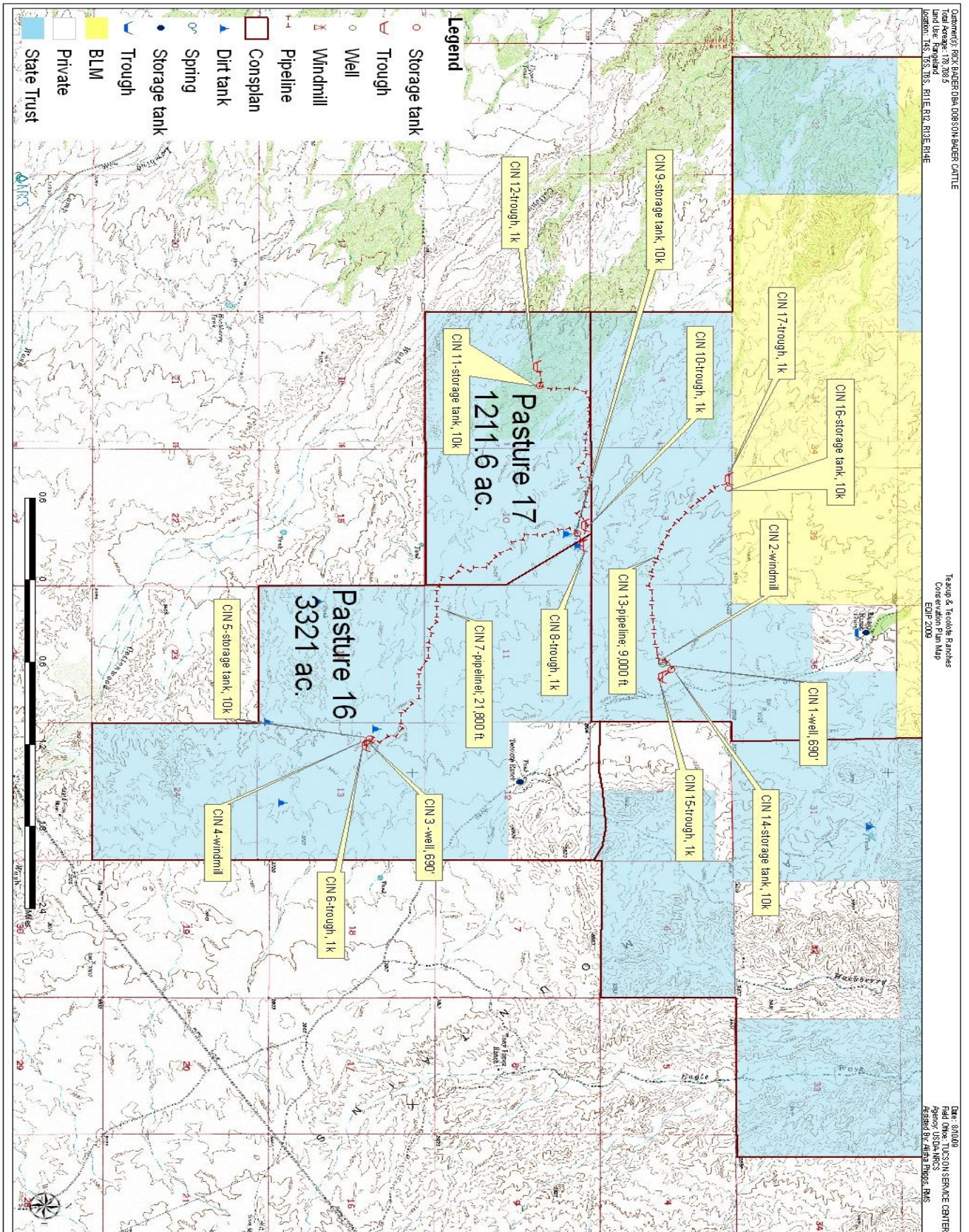
See maps.

TOPO! map printed on 08/27/08 from "Untitled.tpo"



TN ↑ MN
11°
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(revised 7-02-2007)



LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):

The project site is on land administered by the Arizona State Land Department, Tucson Field Office, 4455 S. Park Avenue Suite 101 Tucson, Arizona 85714 (520) 628-5480.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?

This project is not on private property. It is located on State land. A stewardship agreement will be completed once funding has been secured.

HABITAT DESCRIPTION:

Game management unit 37B is located in Pinal County, Arizona, southeast of Phoenix. Two main biotic community types, Sonoran Desertscrub and Semidesert Grassland, comprise the bulk of the habitat in 37B. Catchments 748 and 749 are located within the Jojoba-Mixed Scrub Series of the Arizona Upland Subdivision of the Sonoran Desertscrub community. Common vegetation includes jojoba (*Simmondsia chinensis*), foothill palo verde (*Cercidium microphyllum*), mesquite (*Prosopis spp.*), and desert hackberry (*Celtis pallida*). Average rainfall is approximately 13" and elevation ranges from 2800' to 3400'.

ITEMIZED USE OF FUNDS:

					Cost Share				
	Item	Quantity	Est. Cost/Item	Total Est. Cost	NRCS	Total NRCS Cost	AGFD	Rick Bader Installation Estimates	Total Rick Bader Cost Share
Phase 1 Funded 2009	Tecolote Well - 690 feet	1	\$40/foot	\$27,600	37.5/foot	\$25,875	\$12,700	0	\$0
	Teacup Well - 690 feet	1	\$40/foot	\$27,600	37.5/foot	\$25,875		0	\$0
	Tecolote Windmill	1	\$20,000	\$20,000	12,375	\$12,375		3,000	\$3,000
	Teacup Windmill	1	\$20,000	\$20,000	12,375	\$12,375		3,000	\$3,000
Phase 2	160 psi pipe	30,800 ft	\$1.50/ft installed	\$46,200	1.13/foot	\$34,804	\$13,000	.37/foot = \$11,396	\$17,396
	Troughs	6,000 gal	1.24/gallon	\$7,440	.99/gallon	\$5,940		6@\$250ea = \$1,500	
	Storage Tanks	50,000 gal	1.40/gallon	\$70,000	1.05/gallon	\$52,500		5@\$3500ea = \$17,500	
	Totals			\$218,840		\$169,744	\$25,700		\$23,396

AGFD Estimated Costs per Phase	
Phase 1	\$12,700
Phase 2	\$13,000
Total Not to Exceed	\$25,700

Total Itemized Cost Share for Project	
NRCS Cost Share	\$169,744
Rick Bader Cost Share	\$23,396
AGFD Cost Share	\$25,700
Total	\$218,840

Match Ratio is over 8.5:1 for AGFD

By Pasture

Applicant Name: Rick Bader **Land Use:** Rangeland

(revised 7-02-2007)

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

- **NRCS** – Cost share all components of the project at 75%.
- **BLM** – Expedite the processing of the NEPA compliance documents
- **Rick Bader** – Install all of the project components and supply all heavy equipment needed to do this. The pipelines will be installed in the middle of existing two-track roadways to minimize disturbance to vegetation and avoid creating additional OHV travel routes. This will be completed using a dozer.
- **AGFD** – Cost share the project where possible.
- **ASLD** – Expedite the processing of the ASLD compliance documents.
- **APS (possible)** – May provide solar kits for each well. The potential cost share for this may be in excess of \$30,000.
- **Volunteers** – Local sportsmen may be used to install the wildlife drinkers and pipe rail fencing.

PROJECT MONITORING PLAN:

Water levels will be monitored by Rick Bader and by the wildlife manager. Additional monitoring will be conducted as needed. Minor maintenance will also be conducted as needed by the rancher.

PROJECT MAINTENANCE:

The maintenance of this project will be the responsibility of the rancher. The wildlife manager will help where possible.

PROJECT COMPLETION REPORT TO BE FILED BY:

Ben Brochu

WATER DEVELOPMENT PROJECTS (see attached worksheet):

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (see attached worksheet):

ARIZONA GAME AND FISH DEPARTMENT **WATER DEVELOPMENT WORKSHEET**

PROJECT NAME: Teacup/Tecolote Water Development Project – Phase 1

- 1) **Is the water development listed as a priority in the most recent “Wildlife Water Development Annual Implementation Schedule?”**
No
- 2) **Please list the Development Branch personnel and date coordinated with for this project.**
This is an NRCS cost share project. Coordination with Development Branch is not required per Joe Currie.
- 3) **What is the estimated annual inches of precipitation for the area? (mark one)**
___2-4 ___4-6 ___6-8 ___8-10 ___10-12 __X__12-14 ___14-16 ___>16
- 4) **Is there a perennial water source available to big game within four miles of this project?**
__X__ YES (please complete #5 below) ___NO (skip #5 below)
- 5) **For the accessible, perennial water source nearest this project:**
Name of water source: #752
Type of water source (catchment, spring, dirt tank, etc.): Catchment
Ownership of water source: AGFD
Distance in miles from project: 3.27
- 6) **Is the target wildlife species a result of transplant efforts?** ___YES __X__NO
- 7) **Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument, etc). If private land, list landowner.**
- 8) **Please provide the following information about access to the proposed site:**
Type of access (mark one): ___2x4 vehicles __X__4x4 only ___foot only**
**If foot access only: Distance in miles: Approx. hiking time:

-- Does access to this site require crossing private or tribal lands? ___YES __X__NO

-- Please describe any restrictions to public access:
- 9) **Please list below (or on a separate sheet) the material type and dimensions of each component proposed to be added, modified, or repaired.**

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AGFD Cost Share	\$25,700
Total	\$218,840

Match Ratio is over 8.5:1 for AGFD

10) Was a site visit completed? ___ Yes ___X_No

This is an NRCS cost share project. A site visit with Development Branch is not required per Joe Currie.